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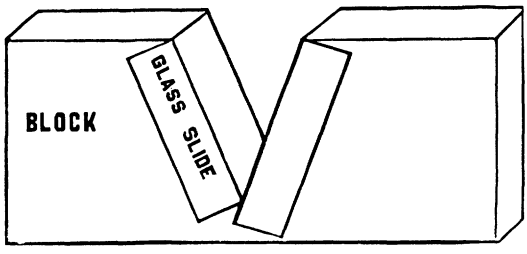
RAPID SECTION CUTTING.

By JAMES E. WHITNEY, F. R. M. S., Rochester, N. Y.

For the benefit of those who have so little time for microscopic work that every minute is precious, we will describe a single contrivance for section cutting which is nearly as rapid as free-hand cutting, and yet enables one to make really good sections with more certainty.

Where one wishes to make sections of numerous vegetable tissues for comparative study, and has only a short time for the purpose, the tedious process of imbedding necessary with ordinary machines is a serious obstacle.

To avoid the necessity of imbedding the object at all, we simply cut in a block of hard wood (say 3 inches by 4, and $1\frac{1}{2}$ inches thick), a wedge-shaped opening, $1\frac{1}{4}$ by 2 inches, or thereabouts, into which the object to be cut is placed so that its sides touch the tapering sides of the opening and prevent motion. On the top of the block over which the blade of the razor is to pass, we cement two pieces of glass slides with their smooth edges parallel with the edges of the wedge-shaped cut.



For the ordinary rapid examination of vegetable tissues, the specimen is held gently in the opening by the thumb of the left hand, while the razor dipped in alcohol is drawn steadily over the glass slips toward the apex of the wedge, with the cutting edge held at the usual angle. After the first cut, if uniformity in the thinness

of the sections is not necessary, the object can be simply advanced slightly by the hand, and after a few trials it will be found that really thin sections can be easily made in this simple way.

When, however, it is necessary to have sections of extreme or uniform thinness, it is best to screw across the under side of the block a strip through which a thumb-screw with fine thread is fitted to work. By this means the object can be raised regularly any desired distance at each cutting.

The block can be prepared in a few minutes by any one, and with all ordinary vegetable tissues, very satisfactory sections can be cut. Hard wood cannot be cut safely in a section cutter without being first soaked or steamed, and as a keen-edged plane will cut beautiful sections quickly and easily, it is best to cut such wood in that way. Sections of different kinds of wood can be cut at the same time by screwing small blocks of each together and taking a section of all at one stroke of the plane.